

Application Number 10/057,576
Response to Office Action mailed May 17, 2006

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AUG 17 2006

REMARKS

This amendment is responsive to the Office Action dated May 17, 2006. Applicant has amended claims 1-5, 7, 8, 11, 12, 14, 17, 19, 20, 22, 24, 25, 32, 34, 36, 37 and 38. Applicant has canceled claims 6, 15, 16 and 23. Claims 1-5, 7-14, 17-22 and 24-38 are pending upon entry of this amendment.

Claim Objection

In the Office Action, the Examiner objected to claim 32 due to claim informalities. Applicant has amended claim 32 to recite "computer-readable medium" and "display a selected representative packet" as suggested by the Examiner. Applicant requests withdrawal of the objection.

Claim Rejection Under 35 U.S.C. § 112

In the Office Action, the Examiner rejected claims 5-21 and 25 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the Examiner rejected claims 5 and 14 for reciting the limitation "the captured network data" with insufficient antecedent basis. Applicant has amended claims 5 and 14 to recite "the captured network packets". Applicant has also amended claims 2, 4 and 20 to correct antecedent basis, and has amended claims 3, 7, 8, 11, 17, 24 and 25 to correct dependency.

In addition, the Examiner rejected claim 25 as being unclear. Applicant has amended claims 19 and 25 to recite "a remainder of the duplicate packets not selected to be the representative packet" in order to clarify that the remainder of the duplicate packets includes the duplicate packets not selected as the representative packet. Applicant submits that claims 5-21 and 25, as amended, particularly point out and distinctly claim the subject matter, as required by 35 U.S.C. 112, second paragraph. Applicant requests immediate withdrawal of all rejections under 35 U.S.C. 112.

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Allowable Subject Matter

In the Office Action, the Examiner indicated that claims 6-8, 11-13, 16-20, 25, 28-30 and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In this amendment, Applicant has amended independent claim 5 to include all the subject matter recited by dependent claim 6, now canceled, which the Examiner indicated would be allowable if rewritten in independent form. Applicant has also amended independent claim 14 to include all the subject matter recited by dependent claim 16 and intervening claim 15, now canceled, which the Examiner indicated would be allowable if rewritten in independent form. Consequently, claims 5, 14 and the claims dependent therefrom are in condition for allowance.

Claim Rejection Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1 and 4 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,836,466 to Kant et al. ("Kant"). Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. Kant fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. 102(e), and provides no teaching that would have suggested the desirability of modification to include such features.

With respect to claim 1, the Examiner asserted that Kant discloses capturing network packets with source and destination devices that include duplicate packet counters and creating package data structures for duplicate packets. Kant describes monitoring a packet flow between any two points in a network that supports a VPN using source-destination device pairings (Col. 4, ll. 40-42). A source device receives packets entering a monitored network, forms packages of the packets, and sends the packages to a destination device via an overhead channel. Kant further describes the destination device receiving packets leaving the monitored network, correlating the received packages from the source device with the packets, and calculating network performance based on the correlated packages (Col. 7, ll. 20-49). The packages created by the source device may include a duplicate count for each packet that reflects a number of duplicate packets entering the monitored network. The destination device determines a number of packets duplicated

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within the monitored network by subtracting the duplicate packet counts included in the packages from the total number of duplicate packets at the destination device (Col. 13, ll. 1-30).

Kant fails to describe capturing network packets from a network with a plurality of distributed agents positioned at different locations within the network and communicating the network packets to an analyzer coupled to the network, as recited by Applicant's amended claim 1. Instead, Kant discloses capturing network packets and calculating network performance for a network with source-destination pairings. In the Kant reference, the source device is coupled to the destination device via an overhead channel used to pass the packages created by the source device. The destination device in Kant analyzes the packet flow only between the source-destination pair based on the packets captured by the source device and the destination device. Kant does not describe the destination device analyzing packet flows based on packets captured from a plurality of distributed devices positioned at different locations within the network. Although the destination device may be paired with multiple source devices, an analysis is performed for each source-destination pair separately.

Furthermore, Kant does not describe communicating network packets captured by a plurality of distributed agents positioned at different locations within the network to a centrally located analyzer or any other centrally located device coupled to the network, as required by Applicant's amended claim 1. On the contrary, Kant states "metrics are calculated by the destination device 223 in real-time, as opposed to being produced by a central facility (such as DA [Data Analyzer] 116 in FIG. 1) that must process captured packet information off-line," (Col. 6, ll. 50-57). Kant clearly teaches away from Applicant's claimed invention by specifically not using a centrally located analyzer to analyze packet flows within a network.

In addition, Kant does not teach identifying duplicate network packets that were captured by the plurality of agents at the different locations with the analyzer, as recited by Applicant's amended claim 1. The destination device in Kant correlates the packages from the source device with packets from the network to determine a number of packets duplicated within the network. As stated above, Kant discloses the destination device analyzing packet flows for a source-destination pair based only on packets captured by the source device and the destination device. Kant does not describe an analyzer that identifies duplicate packets received from a plurality of distributed agents at different locations within the network.

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Kant also fails to teach displaying the duplicate network packets or non-duplicate network packets based on the identification of the duplicate packets, as recited by Applicant's amended claim 1. Kant describes including packet header information and a duplicate packet count in the data structure of a package created by the source device (FIG. 10 of Kant) and in the header storage data structure in the destination device (FIG. 12 of Kant). However, Kant makes no mention of displaying or presenting the captured network packets to a user. Moreover, Kant never mentions including the actual duplicate packet information in the package data structure or the storage data structure, but merely a count of the number of duplicate packets. Kant certainly does not disclose displaying or presenting one of duplicate network packets and non-duplicate network packets to a user based on the identified duplicate packets.

With respect to claim 4, the Examiner asserted that Kant discloses filtering packets and displaying duplicate packets. Kant teaches that source-destination pairings are scalable in the number of different packet flows that can be monitored, and that the source and destination devices are capable of filtering packets based on VPN or other criteria in order to monitor the correct packet flows (Col. 7, ll. 8-11). However, Kant fails to describe performing filtering after capturing the packets and calculating network performance. Unlike Applicant's claim 4, Kant does not disclose filtering non-duplicate packets captured by the plurality of distributed agents at different locations within the network and then displaying the duplicate packets. Again, Kant makes no mention of displaying or presenting the captured network packets, duplicate or non-duplicate, to a user.

In order to support an anticipation rejection under 35 U.S.C. 102(b), it is well established that a prior art reference must disclose each and every element of a claim. This well known rule of law is commonly referred to as the "all-elements rule."¹ If a prior art reference fails to disclose any element of a claim, then rejection under 35 U.S.C. 102(b) is improper.²

¹ See *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (CAFC 1986) ("it is axiomatic that for prior art to anticipate under 102 it has to meet every element of the claimed invention").

² *Id.* See also *Lewmar Marine, Inc. v. Barent, Inc.* 827 F.2d 744, 3 USPQ2d 1766 (CAFC 1987); *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (CAFC 1990); *C.R. Bard, Inc. v. MP Systems, Inc.*, 157 F.3d 1340, 48 USPQ2d 1225 (CAFC 1998); *Oney v. Ratliff*, 182 F.3d 893, 51 USPQ2d 1697 (CAFC 1999); *Apple Computer, Inc. v. Articulate Systems, Inc.*, 234 F.3d 14, 57 USPQ2d 1057 (CAFC 2000).

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Kant fails to disclose each and every limitation set forth in claims 1 and 4. For at least these reasons, the Examiner has failed to establish a prima facie case for anticipation of Applicant's claims 1 and 4 under 35 U.S.C. 102(b). Withdrawal of this rejection is requested.

Claim Rejection Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 2, 3, 32-35, 37 and 38 under 35 U.S.C. 103(a) as being unpatentable over Kant in view of McCreery (US 5,787,253). In addition, the Examiner rejected claims 5, 9, 10, 14, 15, 21-24, 26, 27 and 31 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,085,243 to Fletcher et al. ("Fletcher") in view of McCreery. Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Kant and McCreery

With respect to claims 2 and 3, the Examiner acknowledged that Kant fails to disclose displaying non-duplicate network packets and displaying a representative packet for the duplicate packets by comparing timestamps of the duplicate packets, as recited by Applicant's claims 2 and 3. However, the Examiner asserted that McCreery discloses displaying captured packets with timestamps where non-duplicate packets are identified by different source and destination addresses and duplicate packets are identified by same source and destination addresses. The Examiner then acknowledged that Kant and McCreery fail to disclose displaying a representative packet for the duplicate packets, but stated that it would have been obvious to one of ordinary skill in the art to delete entries for duplicate packets to display one entry for the duplicate packets so that network performance parameters such as packet throughput would be measured without taking into account retransmitted packets.

As described above, Kant does not disclose identifying duplicate network packets that were captured from a network by a plurality of agents positioned at different locations within the network with an analyzer, and displaying one of the non-duplicate network packets and the duplicate network packets based on the identification, as required by Applicant's amended claim

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1. McCreery illustrates data tables for storing packet information derived from data in packet data buffers (FIGS 5a-5c & 6a-6c). McCreery describes a method of recompiling packet data within the illustrated data tables by segregating the packet data into transactions between nodes, sorting the packet data by the nodes, sequencing the packet data in each transaction, and deleting any duplicate packets from the sequence (Col. 14, ll. 47-58). McCreery also discloses a data management module providing real time, inferred and customized data to a user (Col. 11, ll. 63-67).

However, unlike Applicant's claim 3, McCreery does not disclose comparing timestamps of duplicate packets and displaying one of the packets based on the comparison. Instead, McCreery teaches sequencing the packets "via an analysis of the administrative data included in the packet headers such as the sequencing and acknowledgment information provided in the TCP segment 515, 578," (Col. 10, ll. 11-17). As shown in FIG. 5c of McCreery, the sequencing and acknowledgement information in TCP segment 578 of a packet does not include the timestamp, which is included in field 572 of the packet. McCreery then describes discarding any duplicate packets found after sequencing the packets based on the information in the TCP segment.

Furthermore, contrary to the Examiner's assertion, deleting entries for duplicate packets does not render obvious displaying a representative packet for the duplicate packets. Applicant's specification describes selecting a representative packet for the duplicate packets in order to display one of the duplicate packets while not discarding the remainder of the duplicate packets not selected as the representative packets. In this way, the remainder of the duplicate packets may be utilized or displayed at a later time. Displaying a representative packet for the duplicate packets is not the same as deleting entries of duplicate packets, and would not be obvious to a person of ordinary skill in the art.

For at least the reasons stated above, Kant fails to disclose or suggest the requirements of claim 1 on which claims 2 and 3 depend. McCreery lacks any teaching sufficient to overcome the basic deficiencies described above with respect to Kant. Therefore, claims 2 and 3 are in condition for allowance.

With respect to claims 32 and 33, the Examiner asserted that Kant discloses capturing network packets with source and destination devices that include duplicate packet counters and creating package data structures for duplicate packets. The Examiner acknowledged that Kant

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fails to disclose displaying non-duplicate network packets and displaying a representative packet for the duplicate packets by comparing timestamps of the duplicate packets. However, the Examiner asserted that McCreery discloses displaying captured packets with timestamps where non-duplicate packets are identified by different source and destination addresses and duplicate packets are identified by same source and destination addresses. The Examiner then acknowledged that Kant and McCreery fail to disclose displaying a representative packet for the duplicate packets, but stated that it would have been obvious to one of ordinary skill in the art to delete entries for duplicate packets to display one entry for the duplicate packets so that network performance parameters such as packet throughput would be measured without taking into account retransmitted packets.

For the reasons described above in reference to claim 1, Kant does not disclose directing a plurality of distributed agents positioned at different locations within a network to capture packets from the network, receiving the captured packets with an analyzer, and identifying one or more sets of duplicate network packets that were captured by the plurality of agents at the different locations, as required by Applicant's amended independent claim 32.

Instead, Kant discloses capturing network packets and calculating network performance for a network with source-destination pairings. In the Kant reference, the source device is coupled to the destination device via an overhead channel used to pass the packages created by the source device. The destination device in Kant analyzes the packet flow only between the source-destination pair based on the packets captured by the source device and the destination device. Kant does not describe the destination device analyzing packet flows based on packets captured from a plurality of distributed devices positioned at different locations within the network. Furthermore, Kant teaches away from Applicant's claimed invention by specifically not using a centrally located analyzer to analyze packet flows within a network. Kant also fails to describe an analyzer that identifies duplicate packets received from a plurality of distributed agents at different locations within the network.

For the reasons described above in reference to claims 2 and 3, McCreery does not disclose displaying non-duplicate network packets and displaying a selected representative packet for each set of duplicate packets, as recited by Applicant's amended independent claim 32. Nor does McCreery disclose comparing timestamps of the duplicate packets, and displaying

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one of the packets based on the comparison, as recited by Applicant's claim 33, which depends from claim 32. Instead, McCreery teaches sequencing the packets via an analysis of the administrative data included in the packet headers such as the sequencing and acknowledgment information provided in the TCP segment, which does not include the timestamp. McCreery then describes discarding any duplicate packets found after sequencing the packets based on the information in the TCP segment.

Furthermore, contrary to the Examiner's assertion, deleting entries for duplicate packets does not render obvious displaying a selected representative packet for the duplicate packets. In accordance with Applicant's specification, the representative packet represents the entire set of duplicate packets such that only one of the duplicate packets is displayed while the remainder of the duplicate packets not selected as the representative packets are stored. In this way, the remainder of the duplicate packets may be utilized or displayed at a later time. Moreover, Applicant's amended claim 32 recites displaying a selected representative packet for the duplicate packets. Merely deleting duplicate packets upon identifying the packets as duplicates does not include selecting one of the identified duplicate packets as a representative packet. Clearly, displaying a representative packet for the duplicate packets is not the same as deleting entries of duplicate packets, and would not be obvious to a person of ordinary skill in the art.

In a similar manner, Kant and McCreery provide no teaching that would have suggested the additional requirements of Applicant's dependent claims 34, 35, 37 and 38, some of which are discussed below for purposes of illustration. Moreover, the references lack any teaching that would have suggested the desire to modify the references to arrive at the features set forth in the dependent claims.

With respect to claims 35, 37 and 38, the Examiner stated that Kant discloses displaying the captured network packets into sets of network packets based on source and destination number. In support of the rejection, the Examiner merely refers to FIG. 10 of Kant, which illustrates a data structure for a package of packets sent to a destination device from a source device. Claim 35 recites aggregating the captured network packets into sets of network packets based on source information and destination information for the network packets. Applicant respectfully submits that the Examiner's argument does not apply to claim 35. Moreover, Kant makes no mention of aggregating captured network packet into sets.

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Claim 37 recites graphically illustrating the set of aggregated network packets. As described above, Kant fails to disclose displaying or presenting network packets to a user. FIG. 10 of Kant merely illustrates a data structure of a package sent from a source device to a destination device that lists network packets. Kant never describes presenting the illustrated package data structure, or any other packet information, to a user. Kant certainly does not disclose graphically illustrating a set of network packets.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 2, 3, 32-35, 37 and 38 under 35 U.S.C. 103(a). Withdrawal of this rejection is requested.

Fletcher and McCreery

Applicant has amended independent claim 5 to include all the subject matter recited by dependent claim 6, which the Examiner indicated would be allowable if rewritten in independent form. In addition, Applicant has amended independent claim 14 to include all the subject matter recited by dependent claim 16 and intervening claim 15, which the Examiner indicated would be allowable if rewritten in independent form. Therefore, claims 5 and 14 are in condition for allowance as are claims 9, 10, 15 and 21 dependent therefrom. Applicant has canceled claims 6, 14 and 15.

With respect to independent claim 22, the Examiner stated that Fletcher discloses distributed remote monitoring (dRMON) agents capturing network packets, a management station with a display receiving captured data from dRMON agents where the management station sorts and aggregates captured data into a database. The Examiner acknowledged that Fletcher fails to disclose identifying duplicate packets captured by different agents. However, the Examiner asserted that McCreery discloses discarding duplicated packets, and that it would have been obvious to one of ordinary skill in the art to modify Fletcher to adopt the decoded packet recompiler of McCreery to analyze network traffic between a given source and destination node without taking into account duplicate packets.

Applicant has amended independent claim 22 to include all the subject matter of dependent claim 23, now cancelled. Claim 22 now recites wherein the aggregation module presents non-duplicate network packets and a representative packet for the duplicate packets on

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the display. In support of the rejection of now canceled claim 23, the Examiner acknowledged that Fletcher fails to disclose displaying a representative packet for the duplicate packets, but stated that it would have been obvious to one of ordinary skill in the art to delete entries for duplicate packets to display one entry for the duplicate packets so that network performance parameters such as packet throughput would be measured without taking into account retransmitted packets.

As described above, deleting entries for duplicate packets is not equivalent to displaying a selected representative packet for the duplicate packets. In accordance with Applicant's specification, the representative packet represents the entire set of duplicate packets such that only one of the duplicate packets is displayed while the remainder of the duplicate packets not selected as the representative packets are stored. In this way, the remainder of the duplicate packets may be utilized or displayed at a later time. Moreover, Applicant's amended claim 22 recites displaying a selected representative packet for the duplicate packets. Merely deleting duplicate packets upon identifying the packets as duplicates does not include selecting one of the identified duplicate packets as a representative packet. Clearly, displaying a representative packet for the duplicate packets is not the same as deleting entries of duplicate packets, and would not be obvious to a person of ordinary skill in the art.

In a similar manner, Fletcher and McCreery provide no teaching that would have suggested the additional requirements of Applicant's dependent claims 24, 26, 27 and 31, some of which are discussed below for purposes of illustration. Moreover, the references lack any teaching that would have suggested the desire to modify the references to arrive at the features set forth in the dependent claims.

Claim 24 recites wherein the agents assign the captured packets timestamps, and further wherein the aggregation module compares the timestamps of the duplicate packets and selects one of the duplicate packets for display as the representative packet. In the Office Action, the Examiner stated that McCreery discloses displaying captured packets with timestamps and that it would have been obvious to one of ordinary skill in the art to delete entries for duplicate packets to display one entry for the duplicate packets.

As described above, McCreery describes a method of recompiling packet data within the illustrated data tables by segregating the packet data into transactions between nodes, sorting the

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packet data by the nodes, sequencing the packet data in each transaction, and deleting any duplicate packets from the sequence. However, unlike Applicant's claim 24, McCreery does not disclose comparing timestamps of duplicate packets and displaying one of the packets based on the comparison. Instead, McCreery teaches sequencing the packets via an analysis of the administrative data included in the packet headers such as the sequencing and acknowledgment information provided in the TCP segment, which does not include the timestamp. McCreery then describes discarding any duplicate packets found after sequencing the packets based on the information in the TCP segment.

In addition, deleting entries for duplicate packets is not equivalent to displaying a representative packet for the duplicate packets. Applicant's claim 24 recites selecting a representative packet for the duplicate packets in order to display one of the duplicate packets while not discarding the remainder of the duplicate packets not selected as the representative packets. Displaying a selected representative packet for the duplicate packets is not the same as deleting entries of duplicate packets, and would not be obvious to a person of ordinary skill in the art.

Fletcher and McCreery also fail to teach or suggest the features of Applicant's claims 1-4 and 32-35, 37 and 38. For example, Fletcher and McCreery, either singularly or in combination, fail to disclose identifying duplicate network packets that were captured by the plurality of agents at the different locations and displaying one of the duplicate network packets and non-duplicate network packets based on the identification, as recited by Applicant's independent claim 1. In addition, Fletcher and McCreery, either singularly or in combination, fail to disclose identifying one or more sets of duplicate network packets that were captured by the plurality of agents at the different locations, displaying non-duplicate network packets, and displaying a representative packet for each set of duplicate packets, as recited by Applicant's independent claim 32.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 2, 3, 5, 9, 10, 14, 15, 21-24, 26, 27, 31-35, 37 and 38 under 35 U.S.C. 103(a). Withdrawal of this rejection is requested.

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CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed agent to discuss this application.

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August 17, 2006

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